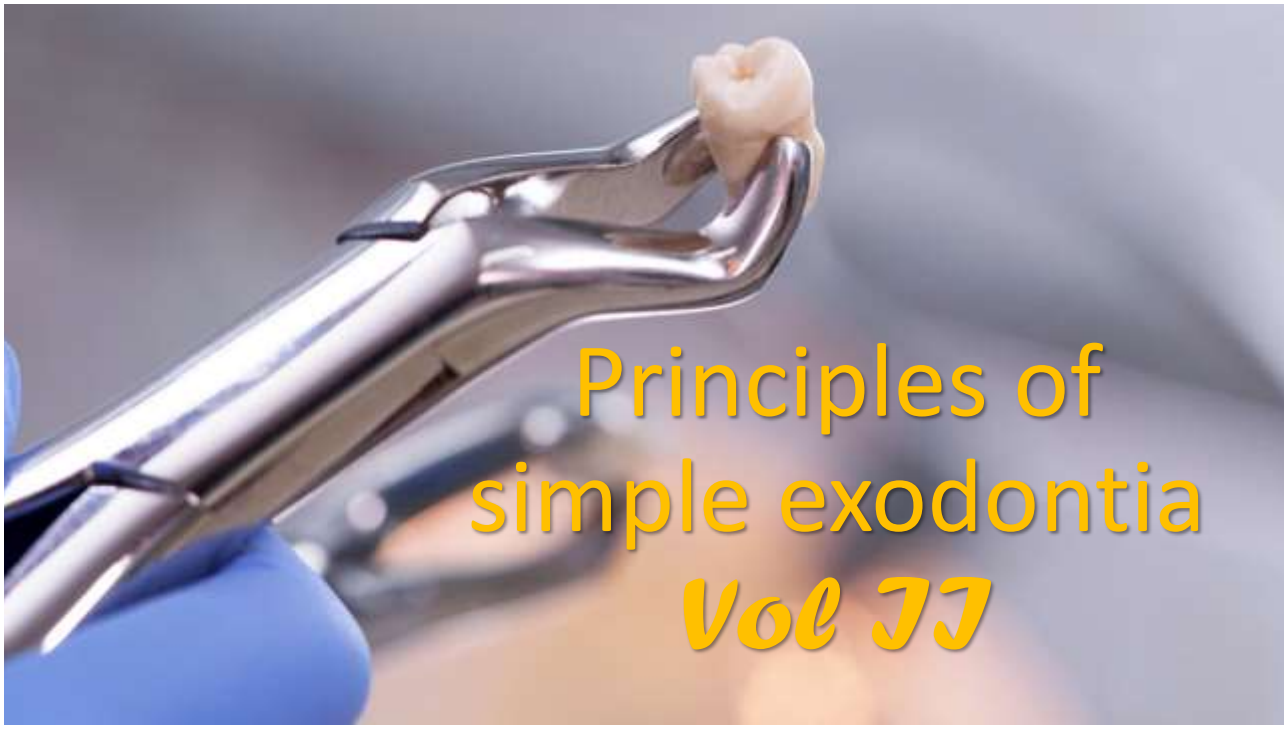


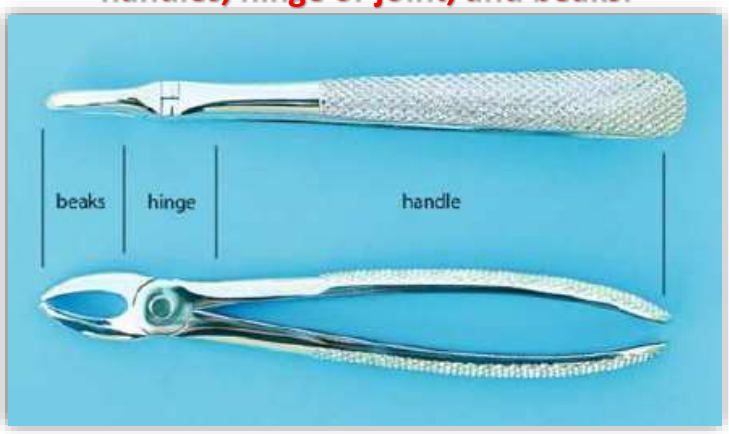
30

Extraction forceps

31

- These instruments are used for removing the tooth from the alveolar bone.
- The basic components of dental extraction forceps are the

handles, hinge or joint, and beaks.



32

The handles of the extraction forceps

- Max. forceps are held with the palm underneath the forceps so that the beak is directed in a superior direction.
- Mand. Forceps are held with the palm on top of the forceps so that the beak is pointed down toward the teeth.
- The handles may be straight or curved.

33

The handles of the extraction forceps

- The handles are usually of adequate size so that they can be handled comfortably and deliver sufficient pressure and leverage to remove the required tooth.
- The handles have a serrated surface to allow a positive grip and prevent slippage.
- The handles are held differently depending on the position of the tooth to be removed.

34

Hinge

- The hinge is merely a mechanism for connecting the handles to the beaks.
- The hinge transfers and concentrates the force applied to the handles to the beaks.

35

Beaks

- The beaks of the extraction forceps are the source of the greatest variation among forceps.
- The beaks are designed to adapt to the tooth root at the CEJ.
- There are beaks designed for single-rooted teeth, two-rooted teeth, and three- rooted teeth.
- The design variation is such that the tips of the beaks will adapt closely to the various root formations, decreasing the chance for root fracture

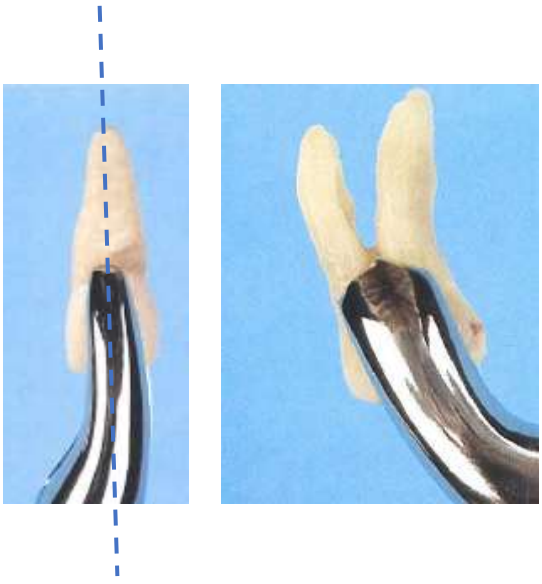
36

Beaks

- A final design variation is in the width of the beak.

(narrow for incisor, broader for molar teeth)

- The beaks are angled so that they can be placed parallel to the long axis of the teeth, with the handle in a comfortable position.



37

- The beaks of anterior max. forceps are parallel to the handles.
- Max. molar forceps are offset in a bayonet fashion to allow the operator to comfortably reach the posterior aspect of the mouth and yet keep the beaks parallel to the long axis of the tooth.
- Mand. Forceps is set perpendicular to the handles.

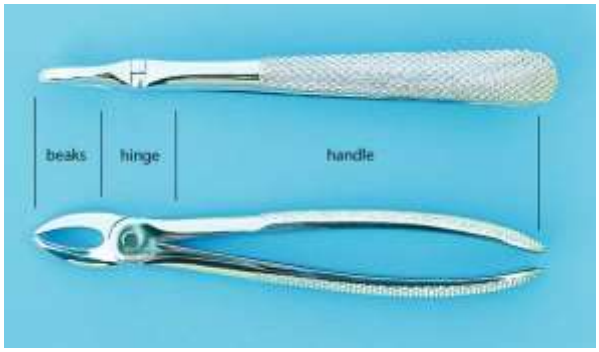
38

Maxillary forceps

- The max. incisors, canine teeth, and premolar teeth are all considered to be single – rooted teeth.
- The max. molars teeth are three-rooted teeth with a single palatal root and a buccal bifurcation. Therefore forceps that are adapted to fit the max. molars must have a smooth, concave surface for the palatal root and a beak with a pointed design that will fit into the buccal bifurcation on the buccal beak.
- This requires that the molar forceps come in pairs, a left and a right.
- The molar forceps should be offset so that the operator can reach the posterior aspect of the mouth and remain in the correct position.

39

The maxillary incisor teeth are extracted with the upper straight forceps.



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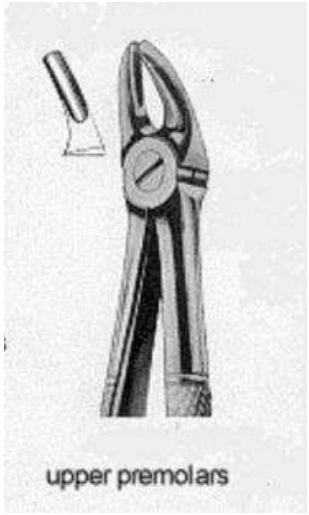
upper premolar forceps

43

upper premolar forceps



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Upper molar forceps

46

Upper molar forceps

47

48

49

Bayonet extraction forceps

50

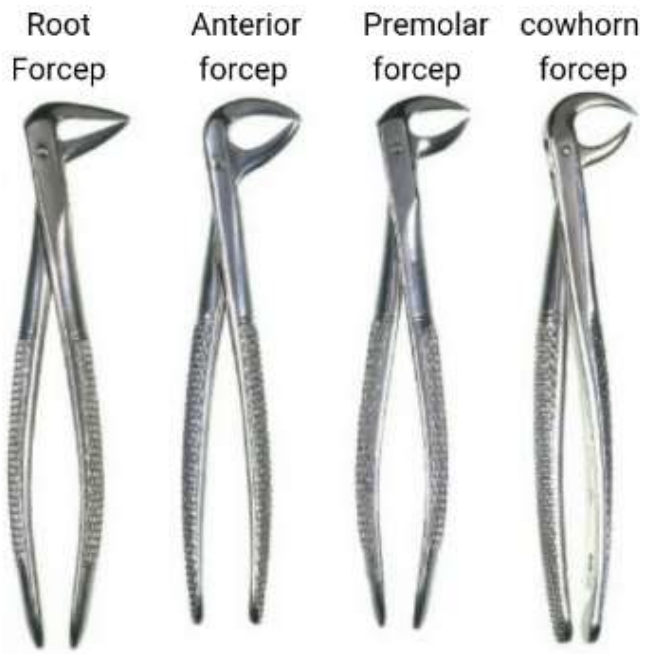
Jockey forceps

51

Mandibular forceps

- Forceps can be used for single-rooted teeth for incisors, canines, and premolars.
- Forceps for two-rooted teeth for the molars.

52



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56

Extraction Forceps

- Choose handle for access, comfort, and leverage
- Choose beaks for adaptation to tooth
- Proper placement: apical seating
- Controlled, steady forces
- Hold at end of handle for greater lever advantage, more power, more feel
- Feel what direction tooth wants to come out and go with it

57

58

Patient and surgeon prep.

- Surgeon:
  - PPE , Hair properly tied in position and preferably covered with head cap.

- Patient:
  - Sterile drape across the patients chest.
  - Mouth rinse vigorously with antiseptic solution like chlorhexidine M.W.

59

Patient and surgeon prep.

60

Chair position: Upper teeth

For a maxillary extraction, the chair should be tipped backward so that the maxillary occlusal plane is at an angle of about 45 to 60 degrees to the floor.
The height of the chair should be such that the patient's mouth is at or slightly above the operator's elbow level

61

Chair position: Lower teeth

For the extraction of mandibular teeth, the patient should be positioned in a more upright position so that when the mouth is opened wide, the occlusal plane is parallel to the floor.
The height of the chair should be such that the patient's mouth is at or slightly below the operator's elbow level

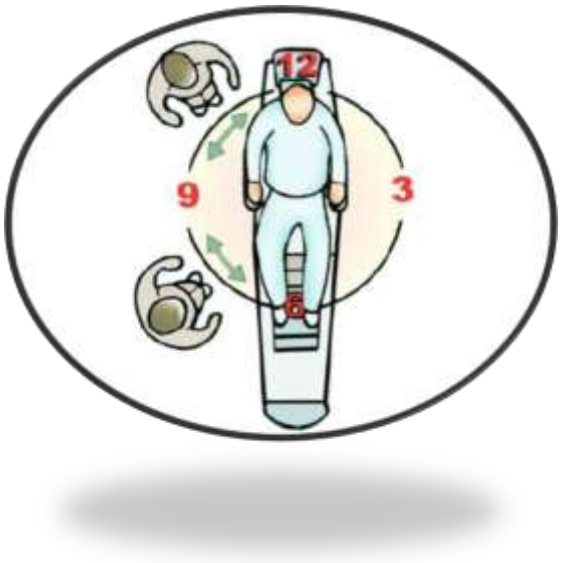
62

Patient positioning

- The patient is seated comfortably in the dental chair and the back of the chair adjusted so that the head, neck, and trunk of the patient are at straight line.

63

Surgeon's position



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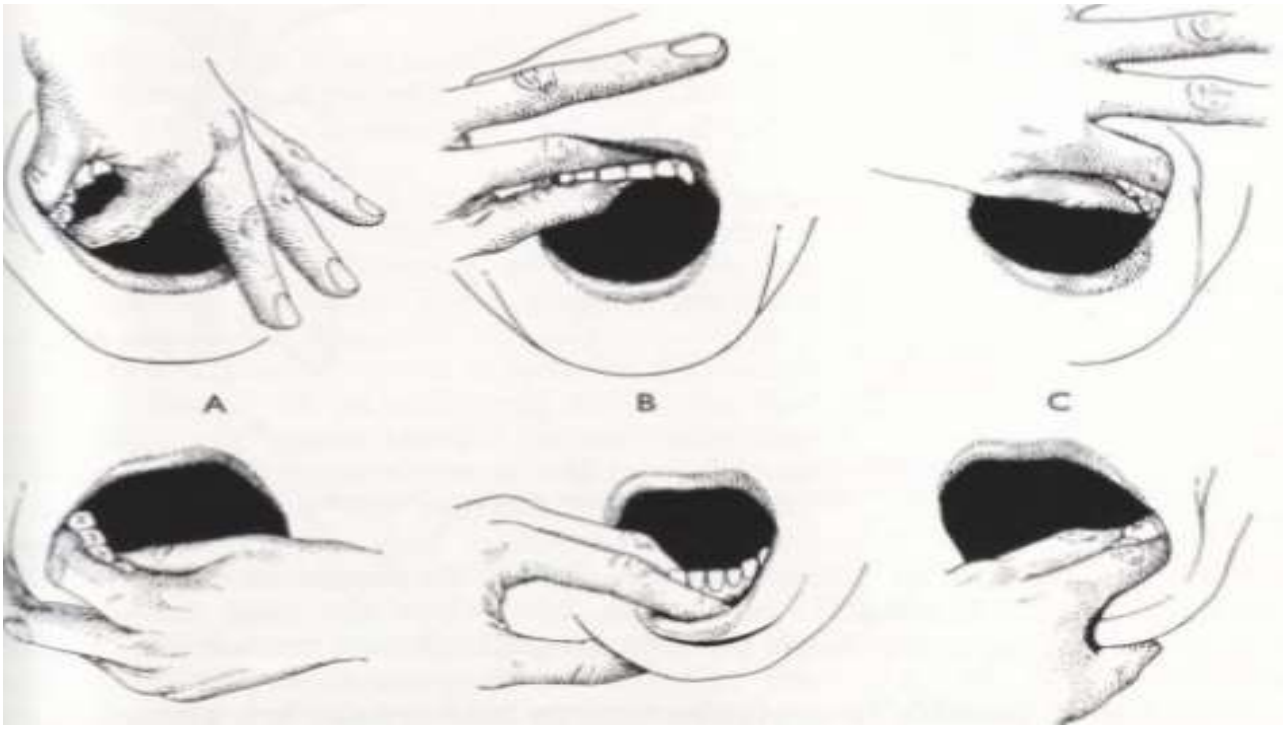
Role of opposite hand

- Reflect the soft tissues
- Stabilizes the patient's head.
- Supports and stabilize the mandible
- Supports the alveolar process

65



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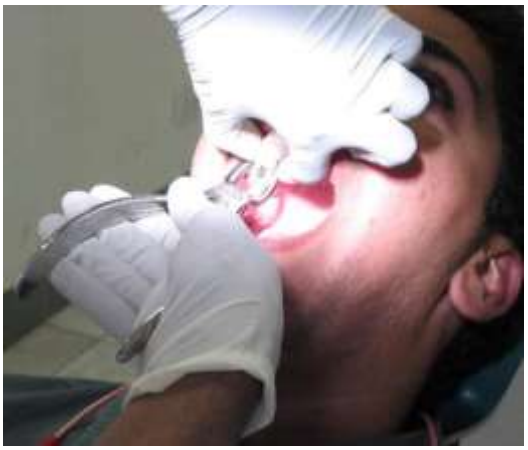


67

Role of the assistant

- Helps the surgeon visualize and gain access to the operative area and apply the instruments by reflecting the soft tissue of the cheeks and tongue.
- Suction away blood, saliva, and the irrigating solutions used during the surgical procedure.
- Help with protecting the teeth of the opposite arch.
- provides psychological and emotional support for the patient by helping alleviate patient anxiety during anesthesia administration and surgery.
- The assistant should avoid making comments that may increase the patients' anxiety and lessen their cooperation.

68

PROCEDURE FOR CLOSED EXTRACTION

69

The stability of the teeth in the dental arch depends on:

1. Integrity of the alveolar process

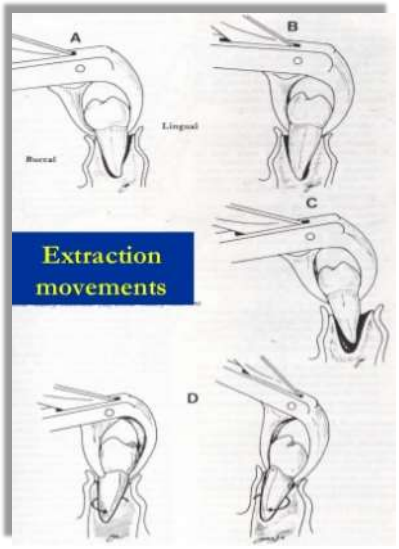
2. Periodontal ligament

3. Gingival attachment.

70

Extraction of a tooth requires:

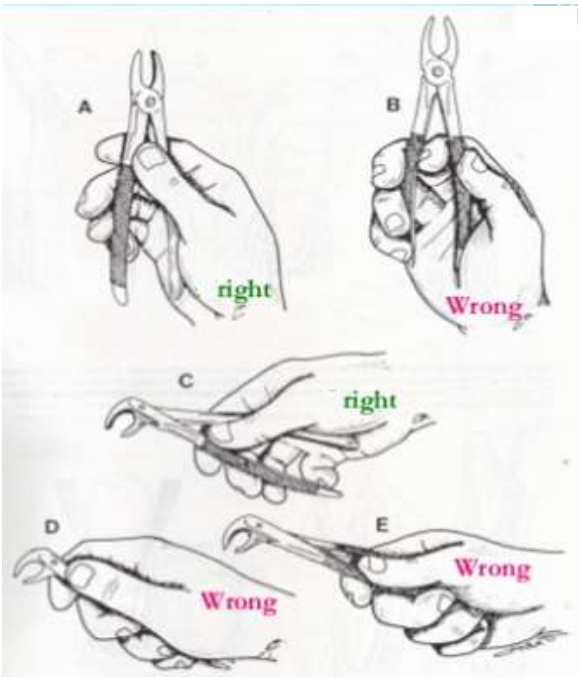
- 1. Separation of the soft tissue attachments of the gingiva and periodontal ligament
- 2. Adequate expansion of the alveolus



71

Gripping the forceps

- The forceps is held in the palm of the hand with the thumb supporting it at the joint.
- On gripping upper premolars and molars forceps the concave side of the handles should rest on the palm of the hand.
- The little finger is placed inside the handles and is used to open the forceps during the application to the tooth.
- When the tooth is properly gripped the little finger is placed outside the handles.



72

Common errors in gripping the forceps

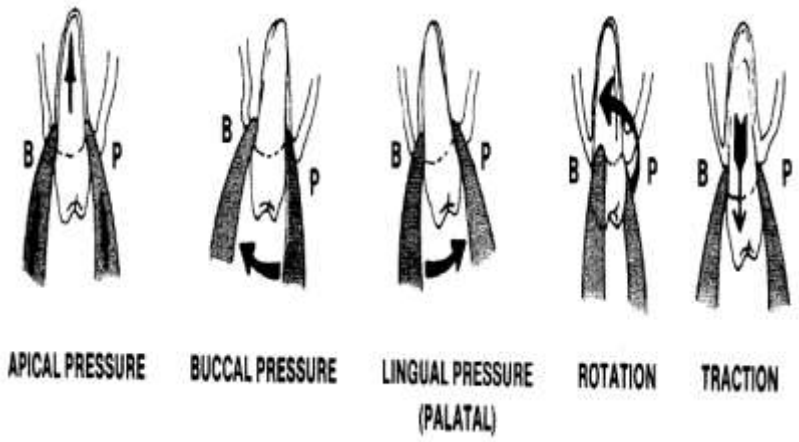
- Placing the index finger inside the handles just below the joint.
- Gripping the upper posterior forceps with the convex side of the handles resting on the palm of the hand.
- Gripping the forceps too near to the joint. This will decrease the amount of force that can be applied to the tooth.
- Gripping the forceps too far from the joint. This will decrease the control of the operator over the forceps.

73

Initial forceps placement

- The dental forceps is designed to grip the root and never the crown.
- The tooth should be gripped at or just beyond the CEJ.
- Apply the forceps blades to the less accessible side of the tooth first under direct vision and then apply the other blade.
- If one side of the tooth is destroyed by caries the blade is applied to that side first and the initial extraction movement is toward that side as well.

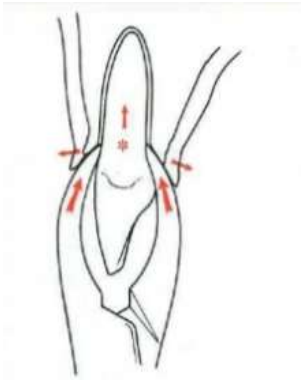
74



75

1- Apical grip

- Seat as far down under gums towards bone as possible
- Seat beaks parallel to long axis of tooth
- Close handles and apply pressure to firmly grip tooth
- Force should be applied with shoulder & upper arm & not with wrist.



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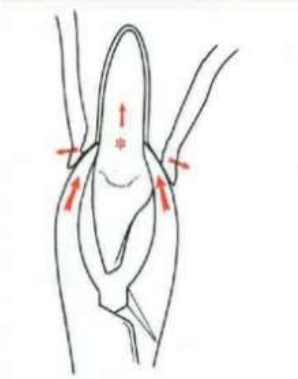
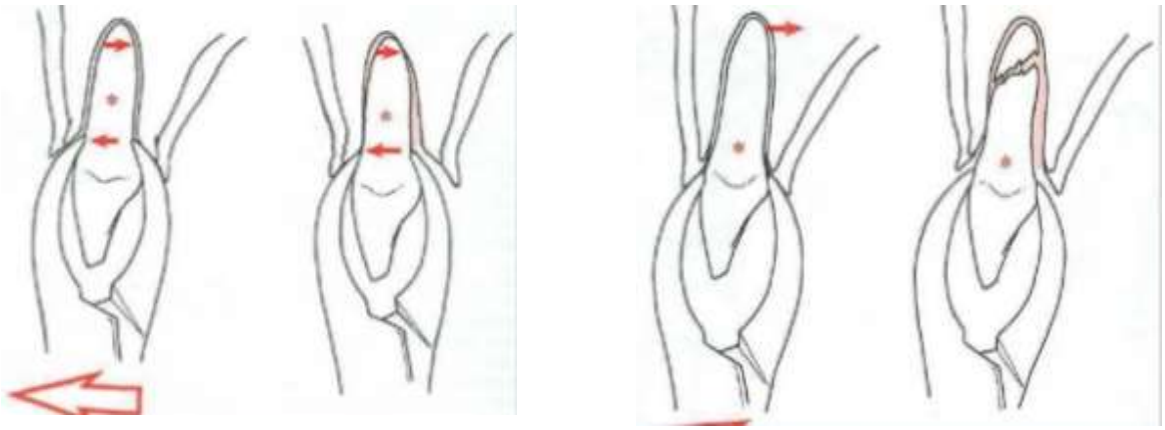
1- Apical grip



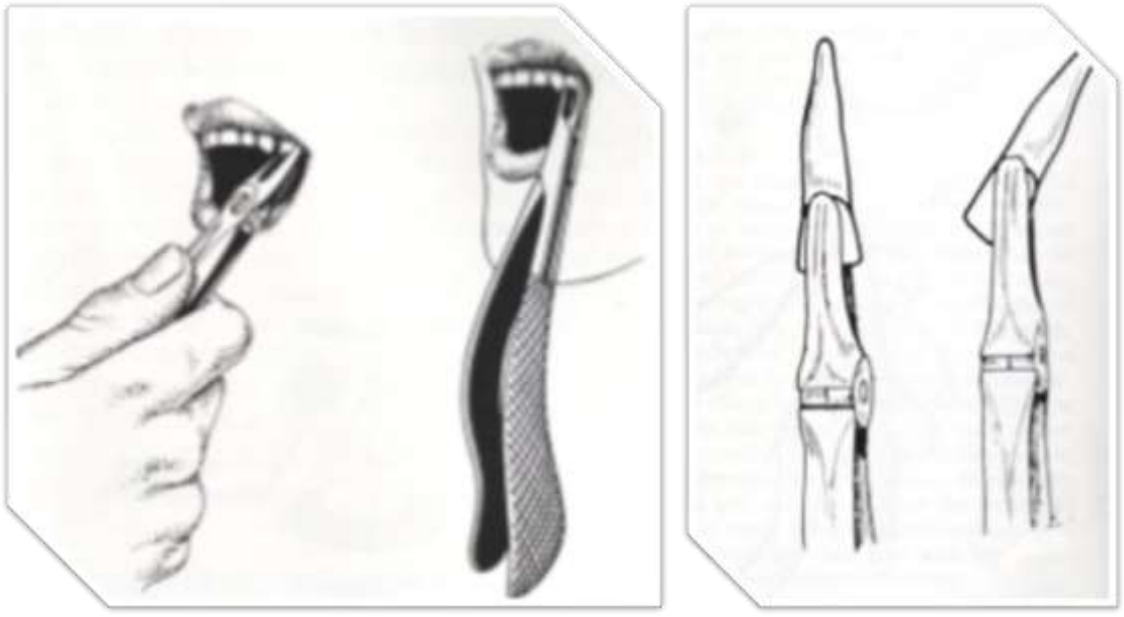
- apical pressure accomplishes two goals: the tooth socket is expanded by the insertion of the beaks down into the periodontal ligament space and causes bony expansion. A second accomplishment of apical pressure is to make the the center of rotation more farther apically.

77



Fulcrum

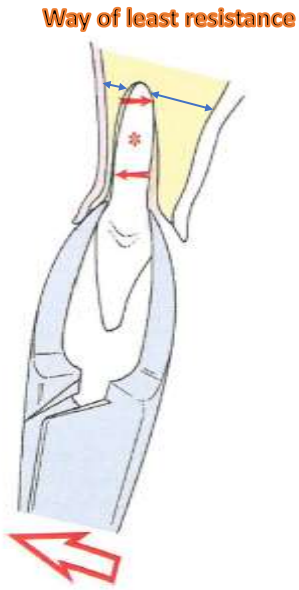
78



79

2- Outward movement

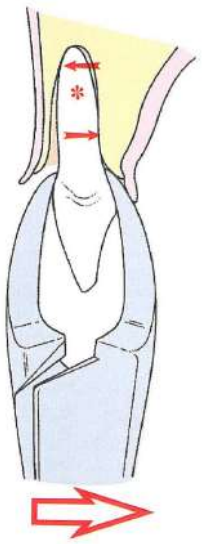
- Outward (labial or buccal) movements is the first extraction movement for all maxillary and mandibular teeth with the exception of mandibular third molar and to less extent the mandibular second molar because of the presence of the external oblique ridge



80

3-Inward movement

- Inward movement (lingual or palatal) is the second extraction movement of all teeth except of mandibular third molar and to less extent the mandibular second molar where inward movement is usually the primary extraction movement



81

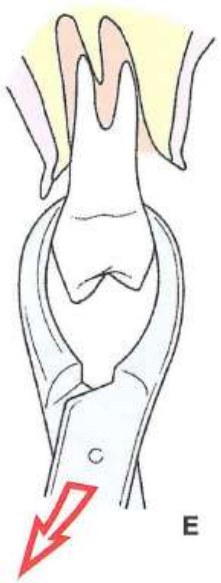
4-Rotation

- It is applied after dilatation of the socket wall (tooth becomes loose in the socket)
- It is used for tearing of the periodontal ligaments
- Rotation may be used as the primary extraction movement in teeth with conically shaped roots eg, maxillary central incisor and mandibular second premolar

82

5- Final movement

- By which the tooth is completely removed from the socket by being delivered in Bucco-occlusal direction with combination of buccal and tractional forces.
- Careful final movement is indicated to avoid injury of the opposing teeth and slippage of the tooth from the forceps

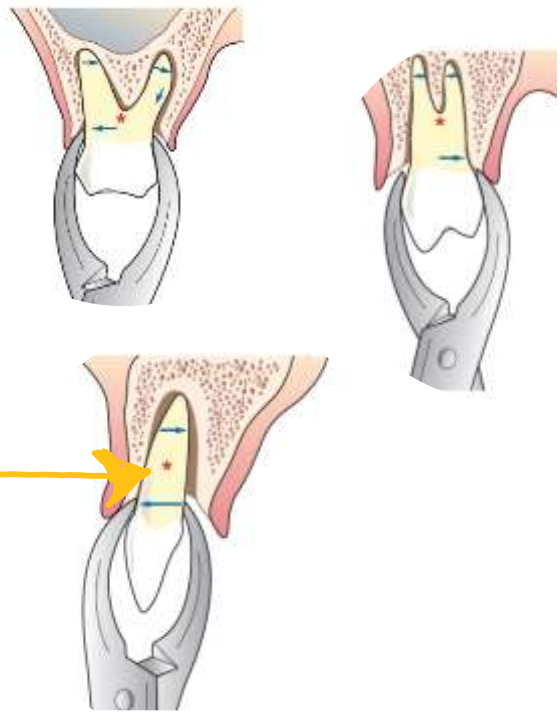


83

Bone Expansion

- Expansion of the bony socket is achieved by using the tooth as a dilating instrument.
- Therefore sufficient tooth mass must be firmly grasped by the forceps.
- The bone must be elastic enough to allow the expansion to occur.

84



85

SPECIFIC TECHNIQUES FOR REMOVAL OF EACH TOOTH

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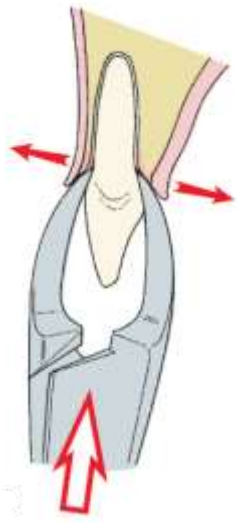
86

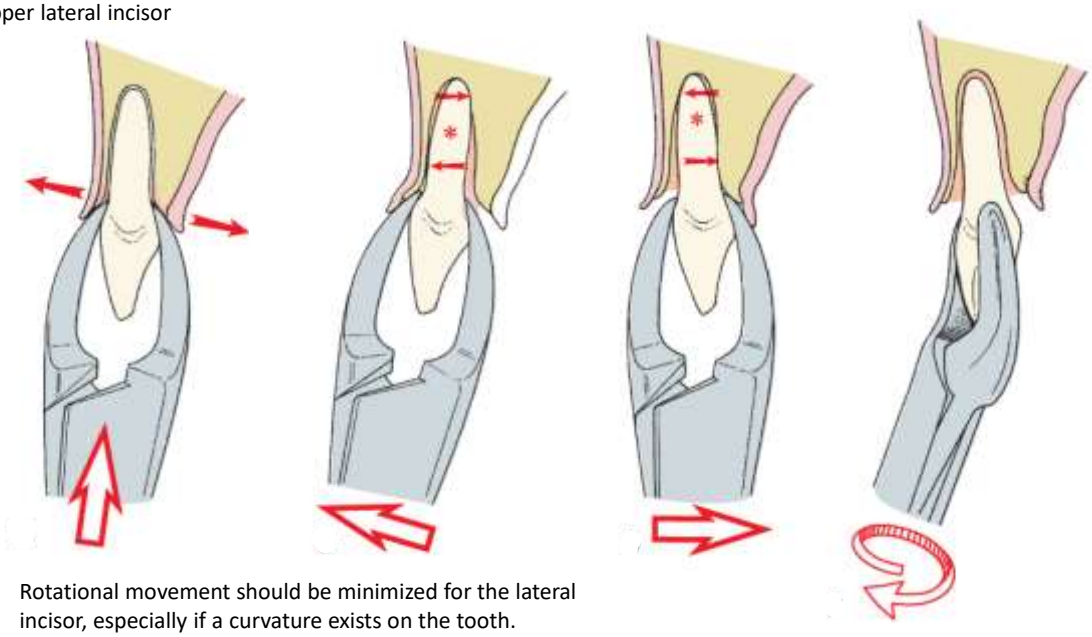
Maxillary Teeth
Upper central incisor



Apical pressure followed by a slow, firm, rotational force

87

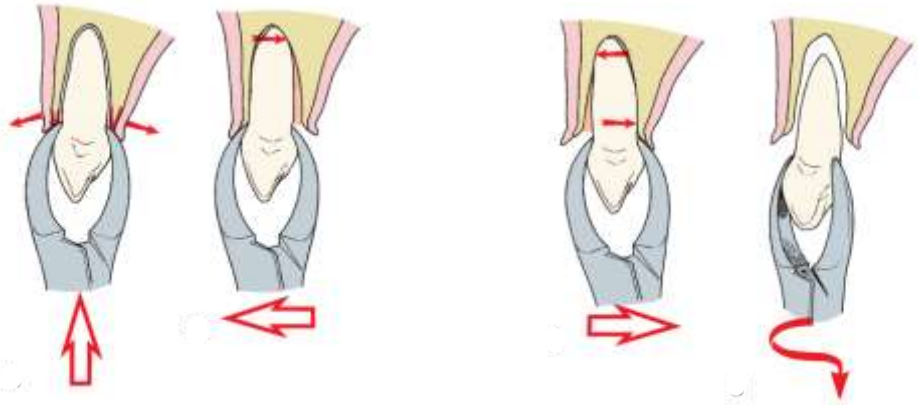
Maxillary Teeth
Upper lateral incisor



Rotational movement should be minimized for the lateral incisor, especially if a curvature exists on the tooth.

88

Maxillary Teeth
Upper canine

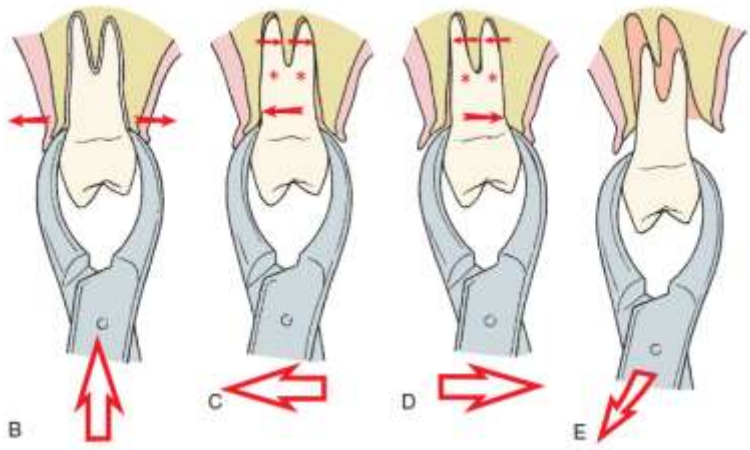


The maxillary canine is usually the longest tooth in the mouth. The root is trianglar in cross section and usually produces a bulge called the canine eminence on the anterior surface of the maxilla. The result is that the bone over the labial aspect of the maxillary canine is usually thin. In spite of the thin labial bone, this tooth can be difficult to extract simply because of its long root and large surface area available for periodontal ligament attachments.

In addition, it is not uncommon for a segment of labial alveolar bone to fracture from the labial plate and be removed with the tooth.

89

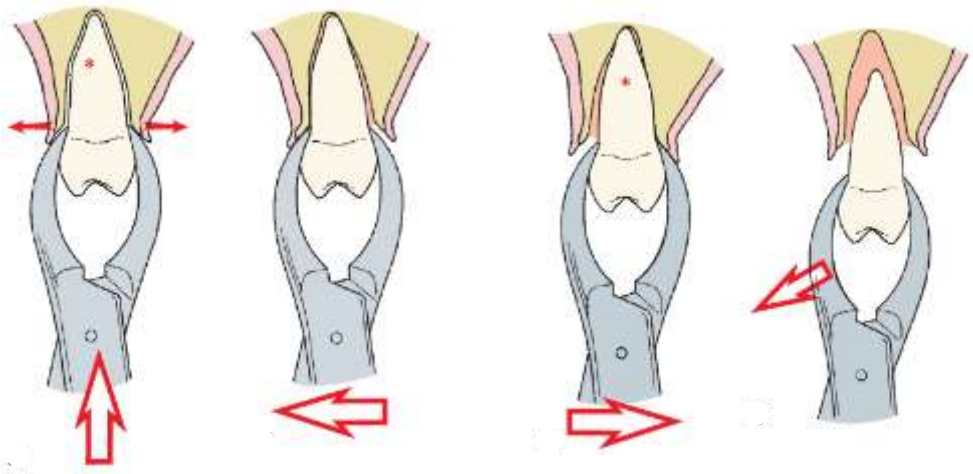
Maxillary Teeth
Upper first premolar



Because of the bifurcation of the tooth into two thin root tips, extraction forces should be carefully controlled during removal of the maxillary first premolar.
Initial movements should be buccal. Palatal movements are made with small amounts of force to prevent fracture of the palatal root tip, which is harder to retrieve.
Any rotational force should be avoided.

90

Maxillary Teeth
Upper second premolar



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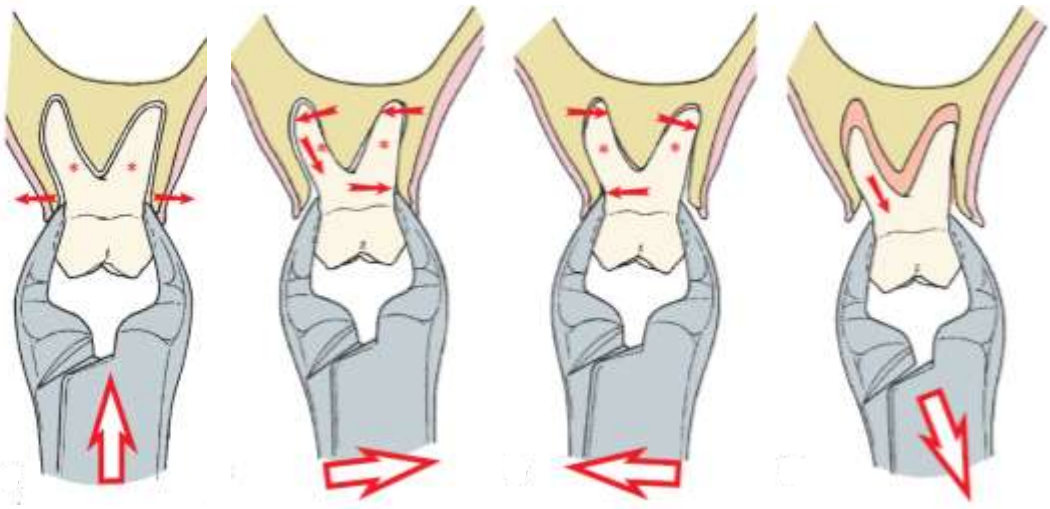
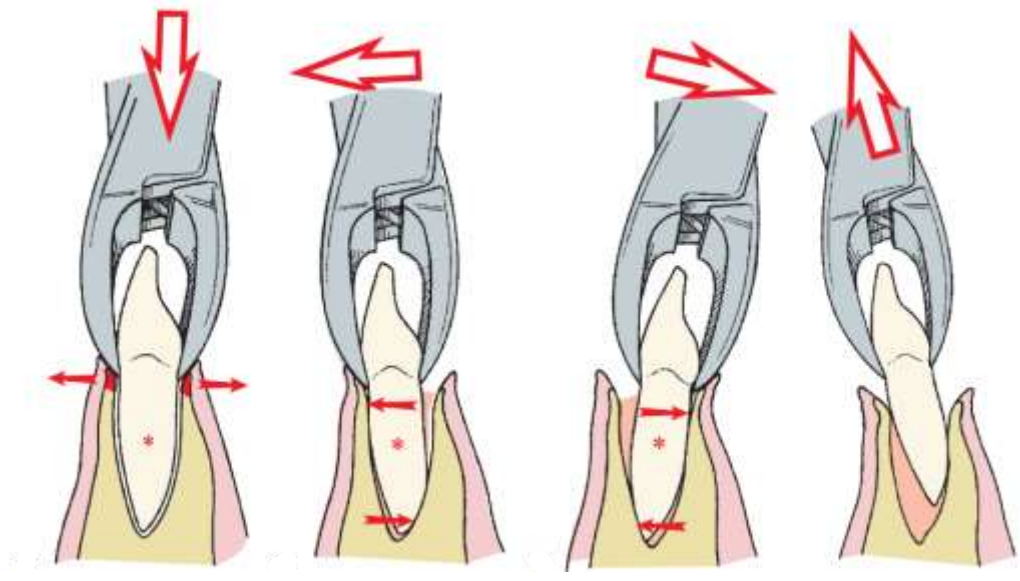
Maxillary Teeth
Upper molars



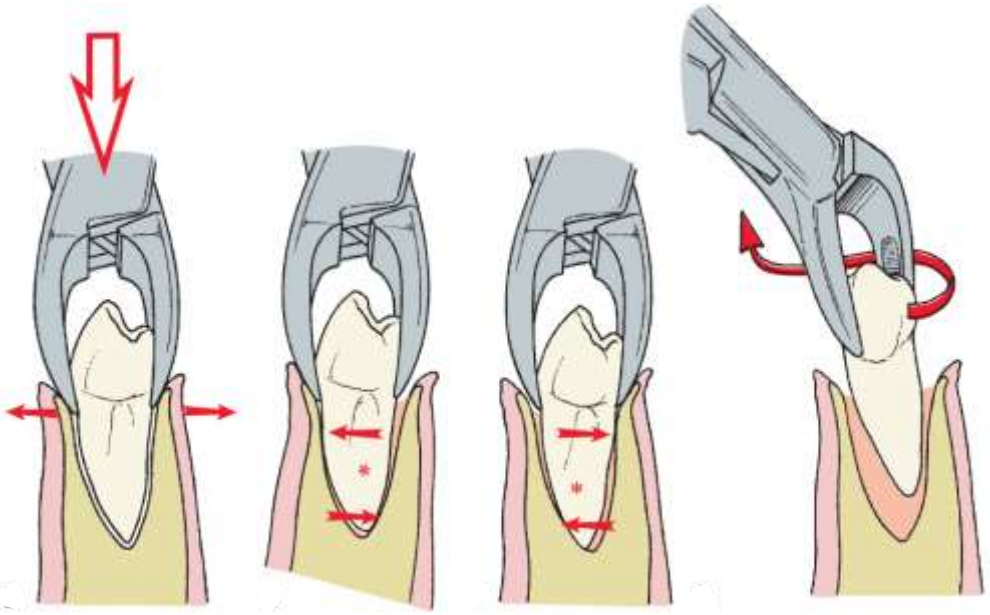
The upper molar forceps are adapted to the tooth and are seated apically as far as possible in the usual fashion. The basic extraction movement is to use strong buccal and palatal pressures, with stronger forces toward the buccal than toward the palate.

92



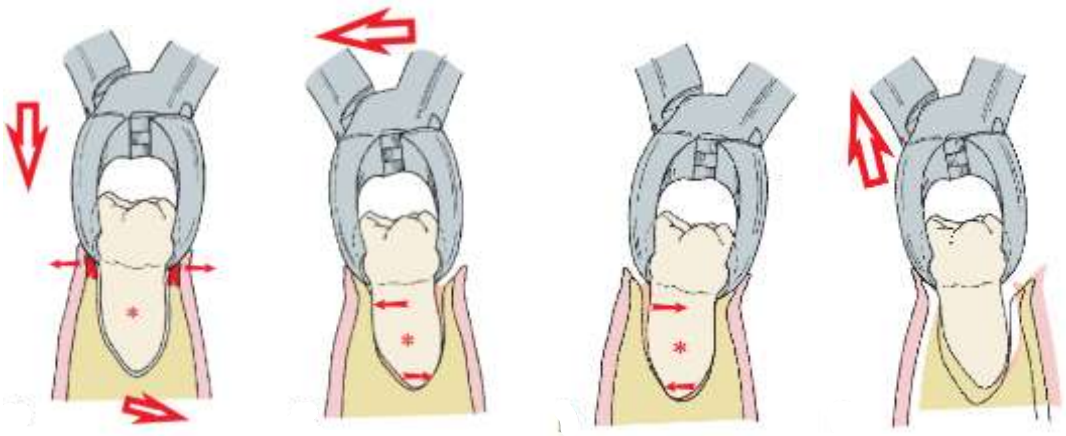
93

SPECIFIC TECHNIQUES FOR REMOVAL OF EACH TOOTH



94

SPECIFIC TECHNIQUES FOR REMOVAL OF EACH TOOTH



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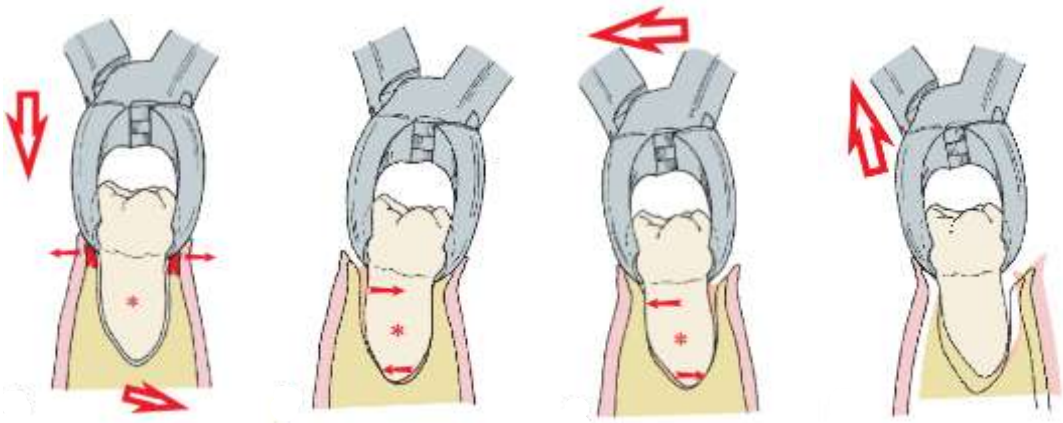

96

In summary, a variety of forces can be used to remove teeth. A strong apical force is always useful and should be applied whenever forceps are adapted to the tooth. Most teeth are removed by a combination of buccal and lingual (palatal) forces. Because maxillary buccal bone is usually thinner and palatal bone is a thicker cortical bone, maxillary teeth are usually removed by stronger buccal forces and less vigorous palatal forces.

In the mandible, buccal bone is thinner from the midline posteriorly to the area of molars. Therefore incisors, canines, and premolars are removed primarily as a result of strong sustained buccal force and less vigorous lingual pressures. As mentioned before, rotational forces are useful for single-rooted teeth that have conical roots and no severe curvatures at the root end. The maxillary incisors, particularly the central incisor and mandibular 2nd premolar, are most amenable to rotational forces.

97

Post-extraction socket care and instructions

98

Post-extraction socket care

- Remove any tooth fragments, broken fillings or calculus deposits
- Trimming of sharp bony edges or projecting septa
- Squeezing of the socket using thumb and index fingers
- Evaluate need for suture (soft tissue laceration)
- Place slightly moistened gauze over socket and apply pressure
- Do not dismiss the patient before adequate control of the bleeding is achieved
- Clean the patient`s lips from any blood spots

99

100

Post-operative Instructions

- Control of postop. hemorrhage:
- 1. Apply pressure to wet gauze placed directly over the socket for one hour. (no chewing or talking, change it when needed)
- 2. Patient should be told its normal to ooze for 24 hours.
- 3. Avoid excessive spitting
- 4. Avoid vigorous rinsing
- 5. Avoid drinking through straw
- 6. Avoid hot drinks the day of surgery
- 7. Avoid smoking the day of surgery
- 8. Avoid excessive exercise.

101

Post-operative Instructions

- Control of postop pain:
- 1.The post op pain is usually not sever and can be managed with mild analgesics.
- 2.The peak pain experience occurs about 12 hours after the extraction.
- 3.Significant pain rarely persists longer than 2 days after surgery.
- 4.Prescribe pain meds

102

Post-operative Instructions

- Diet:
  - Soft and cold food on day of surgery.
  - Use the other side.
- Oral hygiene:
  - Teeth brushing
  - Use warm saline mouth wash the second day of surgery
  - 3times/day for 5-7 days.
- Infection: Antibiotics only when required

103

Multiple extractions - Order of extraction

- Maxilla before mandible:

1. Anesthesia becomes effective in the maxilla earlier and goes away after shorter time.
2. Calculus, part of the tooth or amalgam fragment cannot be lost in open mandibular socket.

- Posterior before anterior

1. Better vision, since blood collects in the posterior region.
2. Better use of elevators

- Hardest teeth to extract be at the end:
- The 1st molar and canine are extracted after their adjacent teeth are removed, so that advantage can be taken of earlier plane expansion and adjacent bone weakening.

104

Reasons for root breakage

- A. Improper application of beaks of forceps:

1. Beaks placed on enamel instead of on cementum.
2. Beaks are not parallel to long axis of tooth.

- B. Incorrect application of force in extraction of teeth:

1. Wrong direction
2. Jerking the tooth (sudden, violent, application of force on one direction)
3. Use twisting motion when not indicated.
4. Pulling on a tooth.

- C. Using wrong type of forceps.

105

Reasons for root breakage

- D. Extensive caries
- E. Brittleness due to nonvitality of tooth.
- F. Peculiar root formation:
  - Curved, hypercementosis, divergent.
- G. Excessive density of surrounding bone:
  - condensing osteitis, osteopetrosis, isolated tooth, bridge abutment.

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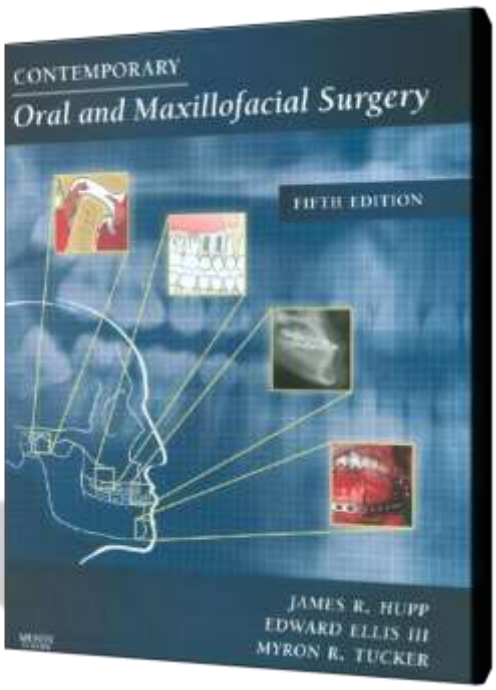

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